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Re: **Shell Offshore Inc. OCS Air Quality Comments**
2007-2009 Exploration Plan for an OCS Operation in the Beaufort Sea
30 CFR Part 250 (Minerals Management Service)
40 CFR Part 55 (Environmental Protection Agency)
11 AAC 110, 11 AAC 112, and 18 AAC 50 (State of Alaska)

Dear Ms. Greaves, Mr. Meyer, Mr. Mendivil, Mr. Walker, Mr. Chapple, Dr. Greene and Mr. Grass,

The North Slope Borough (NSB) provides the following comments on the Shell Offshore Inc. (Shell) OCS Air Permit Applications that were submitted to the Environmental Protection Agency on December 29, 2006, and supplemented on March 26, 2007, for the Beaufort Sea 2007-2009 OCS Exploration Drilling Program for the Shell Kulluk and Frontier Discoverer drilling units.

While EPA has issued the Shell Offshore Air Permit application for public comment, requesting input on compliance with EPA's regulations for OCS air emission sources under EPA's regulations at 40 CFR 55, the NSB is also providing comments on the air permit to MMS and ADEC to address compliance with MMS's federal regulations at 30 CFR Part 250, and the State of Alaska's regulations at 11 AAC 112, 11 AAC 110, and 18 AAC 50 for OCS air emission sources. EPA and MMS both have an obligation to meet the 1994 Executive Order 12898 on Environmental Justice. These comments have been submitted to EPA and MMS to address the NSB's Environmental Justice concerns as well.

All four agencies that have regulations that apply to the review and approval of OCS air pollution. Each agency is responsible for specific actions. The NSB has provided its comments to all four agencies, because there is a need for a coordinated effort for this air permit review. The NSB has found a number of areas in which one agency assumes that another is addressing their requirements, or interpreting their regulations correctly, but they are not. The NSB requests a coordinated review take place, and each agency ensure that their statutory and regulatory obligations are met on this project.

Summary of NSB's Comments

Overall, the NSB finds that Shell's air permit application does not meet EPA's, MMS's or ADEC's OCS air emission regulations, nor does it meet the obligations of the Clean Air Act. The NSB's key concerns are summarized in the list below, followed by a more detailed explanation.

1. MMS, ADEC and EPA did not hold a meaningful public process to obtain input from residents to meet their Environmental Justice, tribal, government-to-government and Coastal Zone Management Act obligations.
2. The permit application is based on scant data and models which have not been validated under arctic conditions, with no monitoring data whatsoever in the area of concern.
3. The lack of site specific monitoring and meteorologic data requires state and federal agencies to use conservative assumptions in permitting this project to ensure human health and the environment are protected; however, conservative assumptions have not been used introducing risk and concern. A conservative and regulatory sound approach would be to permit this project as a major source of air pollution, adhering to the rigors of the Clean Air Act.
4. The operations proposed by Shell will produce substantial air pollution, close to population centers such as Kaktovik, Nuiqsut and Barrow, and within very commonly used subsistence corridors. Air pollution in the Arctic is much more significant than in a more temperate region. The arctic region is subject to extreme atmospheric inversions, which results in the pollution being trapped in a mixing layer only a few feet above the surface. The health impact is thus likely to be much more substantial in the Beaufort Sea even at much lower levels of pollution than urban areas.
5. Shell's definition of an OCS source is not consistent with the Clean Air Act. The OCS source is the drill ship, not the drill site. Nothing in the Clean Air Act (CAA) defines an OCS source as a single exploration well site.
6. Nothing in state or federal law defines an OCS source as a drill site.

7. Shell has applied for a minor source air permit for each and every drill site they plan to explore over the next three years (2007-2009), to avoid the rigors of obtaining a major source air permit for each drilling ship. Shell should be applying for a major source air permit for each OCS source (drill ship).
8. Shell's exploration operations meet the definition of major source of air pollution under 40 CFR 55.2, which defines an OCS source as any equipment, activity, or facility which (1) emits or has the potential to emit any air pollutant, (2) is regulated or authorized under the OCS Lands Act, and (3) is located on the OCS or in or on waters above the OCS.
9. All of Shell's proposed operations meet the definition of a major source of air pollution because they are located on one or more of their contiguous or adjacent OCS leases, are under the control of the same company, and fall under the same Standard Industrial Code.
10. Shell proposes to avoid major source review to avoid baseline air quality monitoring data collection. The lack of baseline data collection adversely impacts the air pollution modeling results.
11. Shell proposes to avoid major source permitting to avoid the requirement to review and install the best available air pollution control technology on its OCS air pollution sources. This circumvents the fundamental goal of the Clean Air Act, which is pollution prevention.
12. Although seeking to avoid a "major source" designation may be expeditious for Shell from a business perspective, it is a flagrant and grievous violation of the principles of environmental justice. Given the already distressing increases and alarmingly high rates of pulmonary disease and cancer, our population warrants a particularly cautious regulatory approach to prevent further incremental degradation of our health.
13. Alaska State regulations for portable oil and gas operations were developed to permit land based oil and gas drilling rigs mounted on wheels to be driven from one well site to another on the North Slope. Nothing in the background for developing the portable oil and gas operations contemplated applying these regulations to drill ships or major OCS sources of air pollution.
14. EPA's public notice states that Alaska Regulations at 18 AAC 50.502(c)(2) require OCS sources to obtain a minor permit from EPA before commencing operation. Nothing in 18 AAC 50.502(c)(2) address an OCS drill ship or specifically states that an OCS drill ship is required to obtain a minor source permit.
15. EPA's January 12, 2007 EPA Guidance Memo directs air permitting authorities to begin their analysis by evaluating whether each individual surface site qualified as a separate stationary source. In Shell's case, each individual surface site does not qualify as a separate source, because the OCS source is the drill ship.
16. EPA's January 12, 2007 EPA Guidance Memo directs air permitting authorities to use a major source determination for oil and gas operations that (1) reasonably carries out the purposes of PSD, (2) approximates a common sense notion of a plant, and (3) avoids aggregating pollutant-emitting activities that as a groups would not fit in the ordinary meaning of building, structure, facility, or installation.
17. Shell should revise its air permit applications to include all of the drill ship emissions (and associated support vessels and equipment) into a single major source permit application to

reasonably carry out the purposes of PSD, and ensure best available pollution control equipment is installed when operating in the Beaufort Sea.

18. A drill site does not approximate a common sense notion of a plant. A plant is the combustion source, which is the drill ship. A drill site itself is not a “plant;” it is a location.
19. The emissions from a drill ship fit in the ordinary meaning of structure, facility, or installation. A drill site does not. A drill site is a location on a lease. A drill site is not a structure; it is not a facility; it is not an installation.
20. There are a number of areas in which one agency assumes that another is addressing the requirements or interpreting the regulations correctly, but they are not. A coordinated review should be carried out so that each agency is accountable for assuring regulatory compliance.
21. MMS’ air pollution control regulations at 30 CFR 250 are not equivalent to EPA’s regulation at 40 CFR 55. MMS has not demonstrated that the requirements of 30 CFR 250 have been met.
22. EPA’s regulations at 40 CFR 55 do not relieve MMS of its obligation to address air pollution under 30 CFR 250.
23. MMS’ regulations at 30 CFR 250.218(a)(1) require Shell’s Exploration Plan to include the: projected peak hourly emissions; total annual emissions in tons per year; emissions over the duration of the proposed exploration activities; frequency and duration of emissions; and total of all emissions. This information is not found in the EPA air permit, nor has MMS evaluated it during the NEPA review, or during approval of Shell’s Exploration Plan.
24. MMS’ federal regulations 30 CFR 250 still exist and apply to OCS sources in the Beaufort Sea. MMS’ regulations at 30 CFR 250.218 were not repealed when the EPA issued OCS regulations at 40 CFR 55.
25. Nothing in federal or state air pollution law or regulation establishes a 500 meter distance for aggregating or not aggregating pollution from OCS sources. The EPA’s proposed use of 500 meters in determining whether air pollution must be aggregated for the purpose of major source classification is arbitrary and capricious. The Clean Air Act defines an OCS source as a drill ship and all other OCS support activities within a 25 mile radius. EPA can not redefine Congressional intent through a single permitting action.
26. Shell asserts in its permit applications at Section 3.2 that ADEC has no direct authority over the review and approval of the Shell project and its air permit. This is incorrect.
27. Shell’s proposed project does not meet the requirements of 11 AAC 110 and 112, because it does not comply with all federal and state air quality laws and regulations.
28. In 1993, the Kulluk was determined to be a major OCS source, under the EPA’s PSD regulations and MMS’ OCS exploration approvals. ARCO was the operator of the Kulluk, and was required to complete a comprehensive major source air permit application, ambient air quality modeling assessment, BACT evaluation and human health impact assessment.
29. In 1993, ARCO estimated 120 days of Kulluk operation, along with its support vessels, would produce over 2,300 tons of NO_x and over 260 tons of Carbon Monoxide (CO) Both pollutants exceeded the 250 ton PSD permit threshold for a major source. Surprisingly, Shell estimates the Kulluk drill ship emissions at 245 tons of NO_x and over 82 tons of

Carbon Monoxide (CO). It is not reasonable for one operator, ARCO to be required to permit the Kulluk as a major source of air pollution in 1993, and later to permit the Kulluk as a minor source of air pollution for a very similar Exploration Plan in 2007.

30. The scope of Shell's air permit approval and application is not clear. Site specific data is missing for most years, and it is unclear if Shell is requesting a three (3) or five (5) year permit.
31. There are a number of deficiencies in Shell's emission inventory which are listed below:
 - Shell's emission inventory does not meet MMS' regulations at 30 CFR 250, because it does not include the total emissions over the duration of the proposed exploration activities, examine the impacts of small particulate matter, or does it examine particulate emissions at 2.5 microns or less (PM_{2.5}).
 - It is not clear if Shell is proposing to conduct well tests flow back oil or flare gas.
 - The emission inventory does not address sources of emission that vent directly to atmosphere.
 - Shell has not included the emissions from a potential relief well.
 - It is unreasonable to issue a permit for 59 days of operation when the applicant clearly has stated that drilling could continue for 75 days or more per well if ice conditions or unanticipated drilling issues arise.
 - Shell has not estimated the potential to emit (PTE) for the ice breaker combustion sources assuming heavy ice conditions which can reasonably be expected during later September, October, and November in the Beaufort Sea. Shell bypassed the PTE requirements and immediately sought to avoid the rigors of a PSD major source permit, by proposing to reduce operating hours on units on an "assemblage of reasonable maximum activity levels."
 - Shell's emission inventory for the Kulluk drill ship and its associated support vessels of 245 tons of oxides of nitrogen (NO_x), just barely falls below the PSD threshold for a major source permit of 250 tons. There is little room for error in this emission estimate. The total emissions can easily exceed 250 tons, at any single well if it takes longer than 59 days to drill, heavy ice conditions are encountered, if any of Shells operating restriction assumptions are incorrect, or if a relief well is required.
 - Shell's emission inventory for the Kulluk drill ship and the Discoverer Drill Ships should include a cumulative total of all emissions required to drill the exploration wells planned on a calendar year. Total drill ship emissions for each ship, on a yearly basis, exceed the PSD threshold for a major source permit of 250 tons by several magnitudes. A minor source permit is inappropriate for these large industrial sources of air pollution.
 - Shell's application excludes emissions from the Bow Thruster Diesel engine when it is used to move the supply boat (Jim Kilabuk) next to the drill ships. However, this clearly contradicts the CAA requirement to include all support vessel emissions in the emission inventory if they are operating within 25 miles of the OCS source.
 - Shell does not provide a historical operating basis for the operating hours or equipment use assumptions used in its application. The NSB requests that agencies require Shell to provided operating records for the Kulluk and Discoverer to verify combustion source usage requirements in similar previous exploration wells, so that the agencies and public

can determine if the operating hours and usage restrictions proposed by Shell are realistic and appropriate.

- Shell has not properly inventoried or modeled carbon monoxide emissions for units that will be operated at low loads, where carbon monoxide emissions will be elevated.
- Shell's emission estimates for 2007 are inconsistent with the emission estimates for 2008 and 2009. While Shell purports that its operating hour estimates are realistic for 2007 based on a maximum operating timeframe of 60 days at a drill site, it does not provide any technical rationale to support the proposed reduction to 43 days per drill site in 2008 and 2009.
- Shell's ambient air quality analysis is not site-specific, does not include the maximum potential to emit for all combustion sources included in the OCS source definition, does not use appropriate background monitoring data for all OCS source locations, does not use an EPA approved meteorologic data set, and is based on a simple single pollution stack screening model, rather than a site specific, multiple stack emission model.
- Shell's air pollution modeling approach is not site-specific and does not meet the technical quality required by the EPA or MMS on past OCS exploration projects in the Beaufort Sea using the Kulluk.
- Shell's application lacks data to adequately assess human health impacts to our coastal communities, and to subsistence hunters and subsistence resources that will be located downwind of Shell's large industrial pollution source.
- Shell's application does not include all required supporting technical information.
- Shell's application estimates hazardous air pollutants at a drill site level, but not at an OCS source level. In addition to this error, Shell's application does not provide hazardous air pollutant emission estimates for sources vented to atmosphere; Shell only provides estimates for combustion sources.

Attached are NSB's detailed comments supporting these conclusions.

To discuss these comments, please contact Gordon Brower (907) 852-0440, or in his absence during whaling season, please contact Martha Falk at the same number. The NSB requests a written response to our comments and concern by each agency addressed on this letter, and an opportunity for the NSB to review the responses and discuss them prior to any permits or approvals being issued on this project.

Sincerely,

Johnny Aiken
Director

Enclosure: Attachment No.1; NSB's Detailed Air Quality Comments

Cc: NSB Mayor Edward S. Itta
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